

WHAT IS CLAIMED IS:

1. A sheet conveying device, for use in an image forming apparatus, that holds a sheet and conveys the sheet to a recording unit, comprising:

a pair of rollers that includes a feed roller driven by a drive source and a pinch roller pressed against the feed roller;

an elastic ring that is fitted over at least one of the feed roller and the pinch roller, in a width direction, on an outer surface thereof; and

a guide film that guides the sheet, the guide film extending from an upstream of the pair of rollers in a sheet conveying direction toward a nip portion between the pinch roller and the feed roller, without contacting the elastic ring fitted over the at least one of the feed roller and the pinch roller.

2. The sheet conveying device according to claim 1, further comprising a roller holder that rotatably supports the pinch roller at an end thereof, the roller holder being movable to allow a pressing condition between the pinch roller and the feed roller to be adjusted,

wherein the elastic ring is fitted over the pinch roller in the width direction on the outer surface thereof, and the guide film is mounted on the roller holder and extends from the upstream of the pinch roller in the sheet conveying direction toward the nip portion between the pinch roller and the feed roller, without contacting the elastic ring.

3. The sheet conveying device according to claim 2, wherein the feed roller is made of metal, the pinch roller is made of resin, and the elastic ring is made of thermoplastic fluororubber.

4. The sheet conveying device according to claim 1, wherein a width of the elastic ring is approximately 1 mm to 2.5 mm.

5. The sheet conveying device according to claim 2, wherein average friction coefficient on a total surface of the at least one of the feed roller and the pinch roller over which the elastic ring is fitted, is approximately between 0.4 and 0.47.

6. The sheet conveying device according to claim 1, wherein projection of the elastic ring from the outer surface of the at least one of the feed roller and the pinch roller over which the elastic ring is fitted, is approximately between 0.2 and 0.5 mm in a diametric direction.

7. The sheet conveying device according to claim 1, wherein the at least one of the feed roller and the pinch roller has a groove formed on the outer surface thereof and the elastic ring is fixedly fitted into the groove.

8. The sheet conveying device according to claim 7, wherein the groove is greater than the elastic ring, with respect to width.

9. The sheet conveying device according to claim 1, wherein the at least one of the feed roller and the pinch roller over which the elastic ring is fitted, has, at least at an end thereof, a tapered surface that is gradually narrowed down toward an axial direction.

10. The sheet conveying device according to claim 2, wherein the pinch roller is divided, in a sheet width direction, into a plurality of rollers, each of the rollers are independently and rotatably disposed on the roller holder, and the elastic ring is fitted over a part of the rollers disposed on a substantially center of the roller holder in the sheet width direction.

11. The sheet conveying device according to claim 1, wherein the guide film has ends protruding toward the sheet feeding direction, the elastic ring is disposed between the protruding ends without contacting the elastic ring, and the protruding ends are located at an upstream side in the sheet conveying direction with respect to a center of the nip portion between the pair of rollers and above the pair of rollers so as to overlap the pair of rollers.

12. The sheet conveying device according to claim 10, wherein the guide film includes a plurality of first guides that are independently provided for the pinch roller over which the elastic ring is fitted, each of the first guides has ends protruding toward the sheet feeding direction, the elastic ring is disposed between the protruding ends without contacting the elastic ring, and the protruding ends are located at an upstream side in the sheet conveying direction with respect to a center of the nip portion between the pair of rollers and above the pinch roller so as to overlap the pinch roller.

13. The sheet conveying device according to claim 12, wherein the guide film includes a second guide that is disposed between adjacent first guides in the sheet width direction, the second guide is disposed at a position where the pinch roller is not disposed in the sheet width direction, and an end of the second guide extends farther from the ends of the first guides toward a downstream side in the sheet conveying direction.

14. The sheet conveying device according to claim 10, wherein the roller holder is divided, in the sheet width direction, into a plurality of holder parts that are independently movable, and the elastic ring is fitted over the pinch roller rotatably supported in a substantially central holder part in the sheet width direction.

15. The sheet conveying device according to claim 3, wherein the feed roller has a ceramic coating on a metal outer surface.